

The Chronicle

of the

EARLY AMERICAN INDUSTRIES ASSOCIATION

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Homespun

By RUTH GAINES

To the informal get-together of the Association, of which Mr. and Mrs. Wiggins were gracious host and hostess at the Tavern in Northampton last fall, I brought a little exhibit from my farm in New Hampshire which seemed to me typical of my state. It consisted of a wicker basketful of yarns, hand spun and hand dyed, together with a tray of dyes hastily gathered in the autumn fields: brown plush butter-nuts; sunflower seeds, in their round, dried containers; magenta sumac spikes; gray tips of the same, like antlers in the velvet; crimson-thorned blackberry stems; coral madder roots; goldenrods, canary-yellow, and, added to these, mineral dyes our ancestors used, the vivid green of chrome ochre, and hematite—that primitive red which decorated with war paint the bronze skin of the Indian before we used it to color our barns and farm houses and flannels with an illusion of warmth. Almost unnoticed, I laid in a tiny skein of upland, home-grown flax.

It was an exhibit I felt honored to bring, at Mr. Wiggins' suggestion, because my state, the state of my colonial forebears on the distaff side, happens to have been a pioneer in the introduction of those improved methods in the cultivating of flax and the hand spinning of it, from which our textile industry of a hundred years ago evolved—that industry which built, in New England, Manchester, Lowell and Pawtucket. It all began on the fringes of Manchester, in "Nutfield," known today in its localized names of Amoskeag Falls, Derry and Londonderry. It began, one might better say, on the other side of the ocean in the Londonderry and Belfast and Antrim of North Ireland, whence religious intolerance and economic oppression drove the Scotch-Irish immigration to our shores.

Oppression, as it has so often done, bestowed opportunity. The Presby-

terian Scotch, who fled Scotland to find what they thought would be freedom in Ireland, were caught there by the planned economy of England, who wished no interference with her Manchester and Leeds, then devoted to woolens, and enforced upon Ireland flax and linen instead. Two great teachers were sent to Ireland to in-



Fig. 1. ROGERS' GROUP

"Why don't you speak for yourself, John?"
Featuring the Dutch low tripod wheel.

struct the wild peasants—wood-kerns the English called them—in the two-fold techniques of flax culture and spinning. The first was Thomas Wentworth, Lord Deputy of Ireland, in 1632; the second was that great textile expert, Louis Crommelin, exiled from France with many fellow Huguenots, in the reign of William III. It is to the first that we owe most, because he imported from Holland not only cultivators, spinners and weavers, but, above all, the Dutch flax wheel. Also he enforced these innovations.

The flax wheel, up to the affixing of the treadle by Saxony spinners a century before, had been turned, as is our wool wheel to this day, by hand. In Saxony also it had received another immense improvement over the spin-

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Up-and-Down Saw Mills

By N. R. EWAN

(Pictures by courtesy of the Library of Congress, Historic American Building Survey Division.)

Of course, very primitive methods of cutting lumber involved the use of a *whip saw* with which two men, with an alternate push-and-pull motion, divided the logs into building material. So long has this ancient type of timber-cutting been out of use that few specimens of the work are found today. Following the hand-operated saws, crude applications of water-powered mechanism initiated the "up-and-down" mills which were in general operation as far back as the early eighteenth century. The machinery consisted of a *carriage*, which supported the log ends resting on two heavy blocks, one of which was adjustable to accommodate various lengths of log requirements. The carriage was guided by small tracks which fitted into corresponding grooves on the under surface. The logs were held in rigid position by iron *dogs*, hinged to the block facing, which were forced into the wood and held fast by wedges. Pointed iron *mill bars* were indispensable tools in these old saw-mills and, until a more efficient mechanical device was evolved, the forward movement of the carriage was accomplished entirely by hand manipulation of these bars, laboriously applied in unison with each downward stroke of the saw. Later, the saw strokes, through a complicated system of levers, operated a ratchet which automatically moved the log carriage forward at the proper rate of speed. With completion of a *cut*, the carriage was returned to place by a reversed gear known, according to locality, as a *rag wheel*, or *Webb wheel*, the latter perpetuating the name of its inventor, William Webb, who operated a saw-mill in New Jersey about 1747. The early saw blades, often hand-made by blacksmiths, were suspended

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Active Collectors

In the endeavor to stimulate more personal contacts between our members, we are listing below those whose questionnaires have indicated that they have collections which come within the scope of the Association's activities, but it must be constantly borne in mind that *none of these collections can be viewed except as arranged by definite appointment*. However, it would seem probable that, if any of these collectors would invite all the others living within reasonable travelling distance to visit him or her at a stated time, those who responded would later take their turns in acting as host for the group, all of which might result in the organization of more local "chapters," such as that which has been so successfully developed in New Jersey. If anyone should choose to go further and invite members who are not active collectors but who presumably would be none the less interested in such meetings, he can procure from the Secretary of the Association (Mr. J. D. Hatch, Jr., 125 Washington Avenue, Albany, N. Y.) a list of those who live in his state, although a small clerical charge may be made for this, if the list is a lengthy one. Any effort along these lines in New Jersey would undoubtedly be materially aided by seeking the cooperation of the New Jersey Chapter (Mr. C. Carroll Palmer, Secretary, 909 West Seventh Street, Plainfield, N. J.) Naturally THE CHRONICLE will be glad to receive and publish reports of any such activities.

CONNECTICUT

Branford: Samuel A. Griswold, 75 S. Main St.
Bridgeport: David B. Boothe, Putney Gardens
Farmington: Henry B. Reardon, Jr., Apple Hill, Talcott Notch Road
Greenwich: H. Lawrence Coggins, P. O. Box 1062; Hasbrouck Haynes, Millbrook
Hartford: Newton C. Brainard, 85 Trumbull St.
Morris: William B. Sprague
New Haven: Edwin Pugsley, 77 Everit St.
Norwalk: John K. Byard, Silvermine
Southbury: Mrs. John H. Ballantine, Ballamor Farm.

DISTRICT OF COLUMBIA

Washington: W. G. Hill, 1725 17th St., N.W.; Herbert T. Shannon, 3104 Cleveland Ave., N.W.

INDIANA

La Porte: Lorenz F. Schumm, 302 C St.

KENTUCKY

Prospect: Robert F. Cate, R.F.D. No. 1

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MASSACHUSETTS

Allston: L. L. Thwing, 209 Kelton St.
Gloucester: Dr. W. M. Poland, 71 Leonard St.
Ipswich: Mrs. Arthur A. Shurcliff (permanent address, 66 Mt. Vernon St., Boston)
Leicester: Mrs. Frank D. Peirce, Mack St.
Middleboro: Lawrence B. Romaine
Needham: Sidney Stewart, 190 Nehoiden St.
North Attleboro: Howard G. Hubbard, R. F.D. 1, Box 45
Northampton: Lewis N. Wiggins, Hotel Northampton
Milford: Thomas E. Barns, Box 236
Salem: Dr. E. A. Rushford, 184 Lafayette St.
Southbridge: Albert B. Wells
Watertown: Mrs. Grace L. Stammers, 24 Lincoln St.
Wellesley: Mrs. Enid L. Fairbairn, 18 Up-land Road
Wellesley Hills: Mrs. Alton B. Jackson, 187 Washington Ave.
Weston: F. A. Belden, 222 Boston Post Rd.
Weymouth: Arthur H. Haywood, 444 Commercial St.
Williamsburg: Miss Carolyn Galbraith
Winchester: Percival Mott, 4 Wolcott Terrace; Mrs. Lura W. Watkins, 2 Ridgefield Road
Worcester: Dr. Burton N. Gates, 24 Charlotte St.; Miss Mary Earle Gould, 23 Maywood St.; Warren C. Lane, 74 Front St.; Albert C. Marble, 8 Berwick St.

NEW HAMPSHIRE

Canaan: Dr. H. Sheridan Baketel (permanent address, 155 VanWagenan Ave., Jersey City, N. J.)
Center Sandwich: R. G. Hutchins (permanent address, 20 Pine St., New York, N.Y.)
Durham: James C. Sawyer
Holderness: Frank G. Webster
Peterborough: Major A. Erland Goyette
Warner: Paul R. Ladd (permanent address, 144 Division St., East Greenwich, R. I.)

NEW JERSEY

Allendale: John W. Doty, 29 Orchard St.
Bloomfield: Dr. A. G. Sinclair, 67 Park Pl.
Cedar Grove: Dr. Henry G. Smith, Essex Co. Hospital.
East Orange: Mrs. Harvey W. Banks, 533 N. Arlington Ave.
Jersey City: Dr. H. Sheridan Baketel, 155 VanWagenan Ave. (collection at Canaan, N. H.)
Middlebush: Lauren S. Archibald
Montclair: Wallace K. Brown, 7 Warren Pl.; Webster Tallmadge, 7 Claremont Pl.
New Brunswick: Loureance A. Bevan, 362 N. Fourth Ave.
Plainfield: John M. Connor, 842 N. Front St.; C. Carroll Palmer, 909 W. 7th St.
Point Pleasant: Mrs. Leland W. Downey, 609 Trenton Ave.
Roselle: Paul C. Hoopes, 620 Chestnut St.
Short Hills: H. E. Damon
Stanton: F. D. Had'ock

NEW YORK

Afton: Marshall G. Hill, Afton Inn

Beacon: Dr. C. J. Slocum, Box 58

Bedford: Dr. G. P. Coopernail

Brooklyn: William B. Dall, 263 Cumberland St.; David B. Elias, 701 Ralph Ave.; A. N. Lincoln, 404 Clinton Ave.; D. Irving Mead, 130 Court St.

Harriman: Mrs. Gillian W. B. Bailey

New York: Morris Curtis, 240 W. 55th St.; Dr. Sigmund Epstein, 15 W. 44th St.; Andrew J. Haire, 1170 Broadway; Peter P. Haselbauer, 260 E. 72nd St.; Mrs. Michael Heidelberger, 333 Central Park West; Thomas E. Huser, 61 Broadway; R. E. Hutchins, 20 Pine St. (collection at Center Sandwich, N. H.); Will Walter Jackson, 175 E. 60th St.; Floyde F. Nichols, 11 E. 36th St.; George C. Robinson, 66 Duane St.; E. L. Sampter, 25 W. 45th St.; William B. Sprague, 43 Cedar St. (collection at Morris, Conn.); Miss Hannah Tachau, 336 Central Park West

Old Chatham: John S. Williams

Oneida: Charles Borst, Kenwood Sta.

Pittsford: Mitchell Pierson

Rhinebeck: Lewis F. Winne, Beekman Arms

Richmondville: George M. Simmons

Saratoga Springs: Miss Harriet Brownell, 21 W. Circular St.; Miss Blanche M. Nolan

Scaford: George L. Weekes, Jr.

Schenectady: Frank C. Bahr, 422 McClellan St.; Francis B. Platt, 25 Robinson St.

Tarrytown: Mrs. Lawrence J. Ullman, Heritage House, Prospect St.

Warwick: Roy Vail

Washingtonville: Melvin C. Dow, Box 143

NORTH CAROLINA

Chapel Hill: Richard J. M. Hobbs

OHIO

Ashland: Mrs. Earl J. Knittle, 420 Center St.

Columbus: Edward Durell, 500 Dublin Ave.

PENNSYLVANIA

Chadds Ford: H. W. Guest

Jenkintown: Arthur J. Fahl, 201 Greenwood Ave.

Landis Valley: H. K. Landis

Landsdowne: Mrs. Charles S. Musser, 25 Dudley Ave.

Millersville: Dr. Burl N. Osborn, 17 Blue Rock Road

Philadelphia: Henry J. Kauffman, 6147 N. Franklin St.

Phoenixville: E. Kimball Davis, Jr., 154 Church St.

Richlandtown: R. P. Hommel

West Chester: Dr. Henry Pleasants, 18 W. Chestnut St.

Wilkinsburg: William A. Dick, Jr., 2015 Penn Ave.

RHODE ISLAND

East Greenwich: Paul R. Ladd, 144 Division St.

Providence: Mrs. H. E. Harris, 112 Francis St.; Albert E. Lowmes, P. O. Box 1531

Rumford: Dr. Philip Batchelder, 106 Greenwood Ave.; Mrs. William C. Brand, 1609 Pawtucket Ave.

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dled wheel now relegated by us to wool, namely, the hooked flyer, by which the spun thread could be distributed from end to end of the spool as each revolved. This last device, in an even more perfected form than that which became standard to the flax wheel, was the invention of no less a genius than Leonardo da Vinci. The Dutch interpretation of the early, square-rigged treadle wheel was the low tripod. It is as if, utilizing every ounce of momentum, economizing material and effort, they had modeled a sharp clipper ship instead of a stately Indiaman. Why the flax wheel was the recipient of so much attention, while the so-called wool wheel waited three centuries for its comparable invention of "Miner's accelerating wheel-head," it would be hard to say. Perhaps the grace of design of the small wheel, which lent itself to the skill of the carver and the taste of the painter, intrigued the imagination. The wool wheel has preserved its austerity; the flax wheel became the implement of an art that fed a luxury trade.

But in Ireland, in the seventeenth century, the manufacture of linen was not a luxury; it was a hard necessity. Under the taskmaster, however, an almost universal craft, more expert among the Scotch than the Irish, was the result, insomuch that when the less land-bound Scotch, again Protestant, left Ireland for the English colonies of the New World, they took with them the best knowledge and practice of the Irish linen culture and trade. It is estimated that in the years immediately preceding our Revolution, ten thousand weavers and spinners came to us, an emigration which had already been in progress for fifty years. In 1828 the Rev. Dr. Boulter wrote from Dublin: "The whole North is in a ferment at present and people engaging one another to go next year to the West Indies. . . . The worst is, that it affects only Protestants, and reigns chiefly in the North, which is the seat of our linen manufacture" (Hanna, *The Scotch Irish...in North America*.)

A decade before the good doctor's complaint, on August 4, 1718, to be exact, the first organized colony of Scotch-Irish, consisting of 319 persons (including four ministers), in five ships, sailed into Boston harbor. Thence, being unwelcome to the Puritans, some went on to Worcester, but the majority to Falmouth, Maine, fin-

ally settling, in 1719, in Nutfield, New Hampshire. This colony brought with them the newest ideas in flax culture, and the up-to-the-minute treadle wheel. Edward L. Palmer in his *History of Londonderry* (N.H.), says of them: "These settlers . . . introduced the art of manufacturing linen of a superior quality, the materials for which they brought with them . . . The spinning-wheel turned by the foot, and which came into general use, they first brought into the country." Jeremy Belknap is his better known authority.

"Is this last a credible statement?" I asked you at your meeting. What,



Fig. 2. IRISH CASTLE WHEEL

then, of Priscilla's wheel, figured in Rogers' plaster group as the familiar low tripod, over which Priscilla leans askance, one dainty foot on the treadle, both hands engaged with the flax, (Fig. 1). Priscilla was spinning doubtless in 1621, only eleven years before Wentworth caused the Dutch treadle wheel to be introduced into Ireland, and within a year after the Pilgrim group itself left Leyden. What, too, of the Dutch meadows of New Amsterdam and the New Jersey colonies? Did they spin the thread for their "ample stores of strong, smooth and nicely bleached home-made linen" with one hand, as they turned the wheel with the other? Did no Dutch wheels of the treadle type reach our continent before our Scotch-Irish grand-

mothers set up theirs in Londonderry, New Hampshire? Were none of the "Saxony wheels," which became the wheels of England, brought over?

All spinners must have read the classic treatment of our art by John Horner (from which they will know I borrow). In the hope of more particular information, I wrote to the Belfast Municipal Museum, to which he presented his collection of spinning wheels and accessories thirty years ago. Despite the war, I received a courteous and negatively interesting reply. The Curator, Arthur Doane, Esq.,—the same Curator to whom Horner made his present in 1909,—had never heard of the reflected glory of our history on North Ireland. Letters were sent also to Dutch residents in this country who interpret Dutch culture to us. They had not been concerned with spinning wheels. Unfortunately, the Rijksmuseum in Amsterdam is incommunicado, if, indeed, it still exists. 1941 is an untoward year for historical research, for history, in more ways than one. Next, letters went to various museums in this country and to Dr. F. L. Lewton, Curator of the Division of Crafts and Industries of the Smithsonian Institution. The statement received from him sums up pretty exactly the net result of this whole inquiry to date—a tentative, not conclusive result. Speaking of collections of flax wheels here Dr. Lewton writes: "The most reliable data possessed . . . seldom goes further back than somebody's attic about 100 years ago."

One hand wheel I have seen, claimed as of seventeenth century importation from England, coming down from English stock in Nova Scotia. It is a table type, with no legs whatever, with a spindle, not a flyer, turned by a small 15-inch wheel. This seems implemented for wool rather than for flax, though, naturally, both can be, and doubtless were, spun on it. A similar spindle wheel, apparently, is figured in a tripod treadled flax wheel on page 560 of Samuel Drake's *History and Antiquities of Boston* (1856), illustrating, aptly for us, his lively account of the spinning contest on Boston Common in 1720 which ushered in the revival of spinning, all brought about by our Scotch-Irish linen workers. Were it not for the distaff, plain to be seen, this wheel might be taken for a pirn or quill winder. But Drake, whose knowledge of the colonial period was exhaustive, would hardly have been likely to err in accepting an

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incorrect delineation of the flax wheel. Though, in this connection, it is perhaps of interest to observe that Tryon, who made a thorough and thoroughly fascinating study of *Household Manufactures in the United States, 1640-1850*, quotes a detailed description of the mechanism of spinning on the wool wheel, as illustrative of the process on the flax wheel. More inexplicable is the statement of Professor T. W. Fox of the University of Manchester in explanation of the mechanism of the old hand wheel, known and commonly used in England since the fourteenth century, latterly under the name of the "bobbing wheel." He says: "A rotary motion was . . . given to the spindle by turning the wheel with the left hand . . . The filaments . . . were attenuated with the right hand." Perhaps neither of these authorities were spinners.

Mindful of Dr. Lewton's assumption that a further search would be made in museums, as well as by letter, I pursued after a "Dutch wheel" exhibited by Holland House in New York this winter. This wheel was not documented, nor was it claimed as a Dutch wheel by the very careful arranger of the exhibit, Miss Maud E. Dilliard; it had, however, come down in a Dutch family in continuous residence on Long Island. Tall, shapely, beautifully turned and grooved, and, finally, painted a pleasing green, with contrasted stripings in the grooves, it confounded me by standing there, a piquant variant of the "Irish Castle." Now the Irish Castles, or tall tripods (Fig. 2) are said by Horner to be distinctive of Ireland and of Ireland alone. We find them here in the North Country; rarely, but still they are extant. Mr. Wiggins has one (as well, of course, as many examples and variations of the treadled wheels herein mentioned, in his notable collections); the Smithsonian has one from Rhode Island; the Nutting collection in Hartford contains one; I was fortunate to get one almost exactly as figured in Horner. This type, in this part of the world, I fancy, was a direct importation, being rather massive in construction compared with our colonial handiwork. What about that light-framed Long Island wheel? Some day, perhaps, a wood expert can tell us.

A circumstance that some think might explain the disappearance of the hand-revolved flax wheel in America—supposing this type to have preceded the Dutch wheel here—is that probably there were comparatively few

wheels in the colonies during their first hundred years. In England itself the spinning of flax had fallen almost into disuse by the opening seventeenth century. In Holland this could not have been the case. But in both countries there prevailed rigid strangulation of colonial industries; in the New Netherlands it was against the law to spin yarns for sale under penalty of banishment, and in New England restrictions were enforced by the Navigation Acts and other imperialis-



Fig. 3. SAXONY TYPE WHEEL
WITH DOUBLE SPINDLES

tic measures, such as that Act of 1718 forbidding the emigration of anyone having knowledge of the processes of textile manufacture. Our Scotch-Irish of Londonderry got away, it would seem, just in time!

One correspondent ventured the surmise that probably flax was not procurable in Plymouth for Priscilla to spin. But it was; it grew wild there, "Mourt" says "an excellent strong kind of flax," as in many other places, and the Indians made common use of it. Further, as early as 1639 in Plymouth itself the cultivation of flax was compulsory, the enactment reading: "That every householder within the Government shall sow one rodd of ground square at least with hemp or flax yearly." In the following year it was enacted: "That all such person or persons as have sowed any hempe or flaxe . . . shall not waste the same, but shall dress the said hemp

or flax, or procure it to be dressed . . . and preserve the seed . . . upon penalty of five shillings . . . for every delinquent therein." The colonies of Massachusetts and Connecticut took similar action, beginning that year. Woodbury in his delightful study, "Textile Education Among the Puritans," gives the text of an Act of 1642 in Massachusetts for "training up the children in learning & labor & other employments wch may bee profitable to the common wealth. . . . In every towne the chosen men . . . are to take care that such as are set to keep cattle bee set to some other impliment withall as spinning upon the rock [i.e., as Mr. Woodbury explains, with spindle and whorl]." So the mystery of the elusive early wheel type remains.

Horner is illuminating in this connection. Speaking of the hand-driven wheels of Picardy thrust upon an uncoöperating Ireland by her second teacher of spinning, Louis Crommelin, in an effort to supplant the Dutch treadle wheel, Horner says: "In Ireland not a vestige, not even a memory, of Crommelin's wheel remains." Horner found, by great good fortune, one wheel like Crommelin's not thirty miles from the latter's birthplace in Picardy, which he figures. It is the only European wheel of this type that he did find, and that in a region where they were in use a hundred and fifty years before. Forgotten, such may have been the fate of our own hand-revolved wheels. When one sees, even now, the attic spinning implements put to the axe to mend the fire, it does not seem improbable. But a theory more flattering to the New Englander is that the original hand-turned low tripod wheel might have been converted by our thrifty ingenuity into the treadle type. On the page opposite that depicting the Picardy hand-wheel in Horner's book is one identical except for the treadle gear (pp. 332-333). The spread of the legs in the latter seems wider, to offset the thrust of the foot; but that would be a simple adjustment for our village craftsman. All that we can say with certainty at present is that here, as in Europe, the hand-powered flax wheel—if it existed—was supplanted by that geared to the foot. We may add that the Scotch-Irish type caused an enthusiastic revival of the spinning art. One other thing, besides our wheels, has remained with us here in New Hampshire abidingly to testify to our Scotch-Irish heritage,—the technique of our spinning, even to the transverse

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dressing of our distaff. The same can be said of our adjuncts of the wheel, the clock-reels, charmingly diverse in detail, but each measuring the Irish standard cut, the "mid-noddies," likewise uniform in measure, and the perpendicular swifts of our grandmothers.

A manuscript reminiscence of a Shaker sister (now dead), of the first community in Watervliet, speaks familiarly of Lady wheel, Saxony wheel, and Priscilla wheel ready for the spinners in the spinning room. Would that we might have talked with that aged sister! What is a lady wheel? And why is a Priscilla wheel? The Saxony wheel we know. It is the German prototype of the true English wheel, often modified in this country to allow of spinning, with double spindles, of two spools of thread at a time (Fig. 3). Horner found this two-spindle type in Europe only in Austria. Many of you have no doubt seen the skilled fingers of Harriette Jakowsky, champion among New England spinners, deftly manipulating this model, which, like the flyer, originated with Leonardo.

There is another form of wheel not figured in Horner, nor mentioned by him, the chair wheel (Fig. 4). In the chair wheel, as in the Dutch low tripod, there is strict economy of effort: two drive wheels, one above the other, powered by two treadles, one for each foot, turn the flyer in even motion, susceptible, as the tripod gear is not, of instant cessation. Like Crommelin's hand wheel, this of mine is intended for left-handed spinning. Perhaps that master would have approved the model, swift, compact, exact. A smaller, cruder version, with solid wheels, and no chair frame is shown in Fig. 5. Lacking other evidence, I would like to guess that this type might be a Yankee, or at least an American, invention. I say Yankee preferably because New England, in contradistinction to the South, for example, was a region of individual spinners, or of groups of such spinners, with keen rivalry, whereas in the South spinning and weaving became largely plantation industries carried on by slaves. Two hundred years ago, spinning schools were endowed in Boston, and spinning contests in which rich vied with poor were held on Boston Common. A hundred years ago, when the factory system was evolving, girls and women in our villages were delighted to be paid at home for spinning the yarns for factory weaving. Not knowing any better at present, I would like to think that my chair wheel was fashioned,

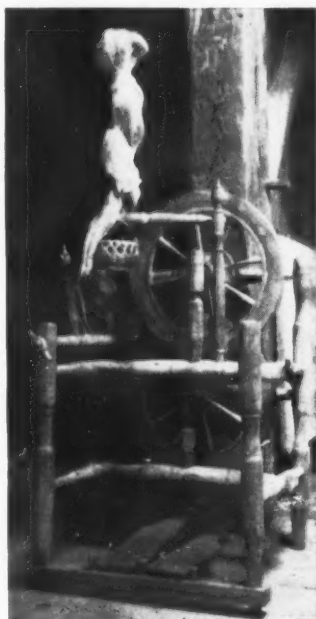


Fig. 4. CHAIR WHEEL

as our non-imported wheels came to be, by the village wheelwright, who loaded it, with other models, into his peddler's cart, to sell to the housewives of the countryside. Two dollars, we are told, he got for his spinning wheel some hundred and twenty-five years ago. Even so, the farmer was not obliged to pay his price; many a spinning wheel was made by husband or son to the spinner's taste and measure. Of the flyer, and other small parts, such as spools, various blanks were kept in stock, possibly at the cabinet maker's or at the country store. We who spin can testify to their wide variation: no Wentworth, no Crom-

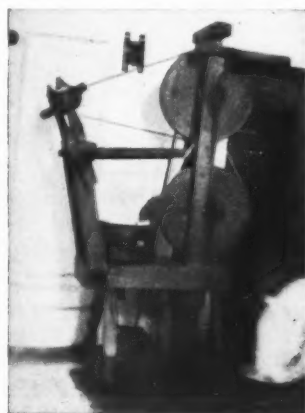


Fig. 5. EARLY SMALL WHEEL
(Geared like larger chair wheel; as pictured, spinning Angora yarn.)

melin regimented them, no two, it seems, fit the same wheel. But my chair wheel, one would think, might have netted its maker something above the average price. Fastened together only by wooden thumb screws and buttons, it can be folded in the flat, and manifestly was designed for handy transportation. Like its household companion, the melodeon, it must have been tucked into the sleigh or the democrat wagon for many a social gathering such as spinning bee or fair. And to guard against loss, it bears the name of its owner, F. Reynolds, deep cut on its frame.

The carved name, the brown linen thread or indigo yarn still wound on the spool, the flax still bound to the distaff, these give to the dusty, silent wheels of our auctions and shed lofts an almost human appeal. Even today, if one is fortunate, one can complete the picture, as I did in Langdon on an autumn afternoon: the little old lady—and *lady* I mean—in the homestead built by her grandfather in the wilderness; the treaty made with him by the Indian chief who neighbored him on the eastern flank of Fall Mountain, in-fringed and woven wampum, hanging above the flax wheel; the wheel itself, warming to the spinner's hand beside the hearth fire; the chests of dressed flax, flax skeins, and woolen rovings, of linen and of blue-checked smocking in upper chambers; spreads of wheels of fortune, quilts, valances and netted canopies on four-post beds; loomed carpeting on floor and stairs; furnishings, pictures, all as they should be—not antique, but homespun in a living pattern—this I have seen.

To most collectors of the early primitives, a sausage gun is a familiar implement. We often see them in antique shops—a cylinder of tin with a tubular snout, measuring about a foot long, and a wooden plunger in the shape of a pestle. Many ingenious farmers made contrivances whereby the plunger was worked in and out, such as a wheel to which the handle was attached with leather fastenings. The strangest sausage gun that has come to light is one measuring nearly four feet long. The plunger is like a broom handle with a knob on the end around which strips of leather were wound. Two pieces of tin were used for the tube part and two for the shaped snout, welded together. Made for a tavern or for a large family, the gun could produce many sausages in one operation! M. E. G.

The Chronicle

"My Friend the Blacksmith -- Again"

By L. B. ROMAINE

Taking to heart the Editor's appeal in the last issue, noting his reference to those who, anxious to complete research and never, never quite put the unfinished symphony on paper, and also, the remarks about the "lighter vein," I am tempted to try your patience with my obsession—Old Iron. I am still convinced that there are many of us who think of the blacksmith as the man who "used to shoe horses," and am still annoyed by it. When speaking at various historical societies, I am not surprised when some kind-hearted member, in helping me to unload my exhibit, brings in the coal shovel that I keep in the car in winter. I hope that some day I shall convince many more people that cast iron was as early, if not earlier than wrought iron, and, with that thought in mind, that Pliny, about 40 A.D. stated that the best steel was to be found in China, not Bessemer nor Chrome, but excellent steel just the same. In short, there is still a great deal to be learned about the early castings of iron and the crude bars that the smiths turned into everything from "hair-irons" or curling irons to sleighs.

Referring to our mutual friend Mr. Hazen (1836), I quote: "The blacksmith operates in wrought iron and steel, and from these materials, he fabricates a great variety of articles, essential to domestic convenience, and to the arts generally. This business is one of those trades essential in the rudest state of society. Even the American Indians are so sensible of its importance, that they cause to be inserted in their treaties which they make with the United States, an article stipulating for a blacksmith to be settled among them, and for a supply of iron . . . in short, we can scarcely fix upon a single utensil, vehicle, or instrument, which does not owe its origin, directly or indirectly, to the blacksmith."

Finding contemporary statements that justify one's opinions is real balm for the puzzled student. As a dealer, I have no count of the number of people who have picked up a nice old latch, scratched its surface and remarked, "Oh, that is steel. Must be late!" or perhaps, when I show an oven door with a nice cast eagle, stating that it was made about 1780, I have heard, "But it is cast iron, isn't

it? It can't be as early as that." I have said little, but "this is my day to howl."—It is raining and I feel just like it. May some of these same folk read these notes.

Leaving Tubal-Cain, seventh generation removed from Adam, and described as "an instructor to every artificer in brass and iron" out of the picture, forgetting Pliny's reference to Chinese steel in the first century, and allowing Europe her Swedish steel in the fourteenth century, let us take a brief look at the history of American iron. (Here, I must admit that Mr. Charles R. Harte has done most of the research, and I do not claim credit). The Carolinas, 1585; Virginia, 1610; Hammersmith (now called Saugus), 1642; Braintree, 1650; Taunton, 1652, and East Haven (just outside of New Haven), 1657. The Carolina iron ore was never exploited. The Virginia works were destroyed by the Indians about 1620. This leaves Hammersmith (where the charter of the Company was so liberal as to allow the iron workers to "skip church" and caused no end of trouble) as the first furnace to really live and prosper. Here the furnace produced many cast pots and kettles; and the forge (hard beside it) the first American patented scythe, the pine-tree shilling mould and the first fire engine for "ye towne of Boston." Here were American castings, American steel and American wrought iron I am sure, all worked together in one small "works, consisting of blast furnace, forge and finery." So much for dates of iron and steel. May this CHRONICLE reach every home where they dream of the horse-shoeing smith and think of steel as a twentieth-century product of science!

In the past, I have tried in so many ways to show the importance of my friend to the early Colonist that the reader must forgive if I repeat. Dentistry, however, is new even to me. A Rhode Islander, who recently purchased an old homestead, found on the property the old smithy. In the eaves was a tin can quite well filled with old human teeth. In checking details with various local octogenarians, he found one who as a child had been sent to the former owner of his home, and, whose father had gone there before him, to have his teeth pulled. The blacksmith had apparently acted as dentist, with one of various pairs of iron plyers, for the local people. To date I have had no evidence of any appendix operations, but after this one, am expecting almost anything. Carrying this example

as Hazen would have it, from the "direct" (pulling of teeth) to the "indirect" manufacture of "turn keys" (the early dentist's tooth-pullers) and all manner of medical and surgical tools and instruments, we might even say that the smith was absolutely indispensable to the early practice of medicine.

Having had occasion to be in New Bedford recently, I was reminded of whaling days, all the way from the "along shore whaling" in the seventeenth century to the days of the six-year cruises to every port in the world in the nineteenth century. Running through the old log books, one can not miss the entries that can mean but one thing — without the blacksmith, the voyage could not be completed. From the iron-bound blocks for the rigging to the finely wrought lance that killed the whales, there was only one man who could make or break the expedition. True, the carpenter repaired the whale boats and the cooper built the barrels for the oil, but someone else had to make the nails for the carpenter and the hoops for the cooper. Carrying this thought even further, few ships would have sailed, for whales or for China and the Seven Seas without the services of a good smith on shore.

It is impossible to imagine the discovery and development of our Great West without the blacksmith. From the cotter pins for the Conestoga wagons, the locks for the guns, and the shoes for the horses to the picks and shovels for the miners in the fifties, the West depended on the American blacksmith.

Precision machinery of the last century of course deprived the smith of many small jobs. The old forge continued as before but instead of producing guns, wheels, sleighs, hinges, locks, etc., etc., it supplied the new machine shops such as the gunsmith, wheelwright and many others with parts, leaving the assembling and finishing of the products to other hands. Just when the changes came in each case is not certain—it was probably a gradual process, starting with a large forge with several bellows (as the one planned for construction at Westport in 1780), in which one smith did the gun work, another horses and another tools. These specialists, when the machines came along more than likely set up their own shops with forges and the machinery necessary to produce a finished line.

I do not mean to give the impression that the blacksmith is no more.

(Continued on page 144, column 3)

Early American Industries Association

Early American Industries Association

LEWIS N. WIGGINS, President,
Northampton, Mass.

J. D. HATCH, JR.,
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Albany, N. Y.

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Communications should be addressed
as follows: Pertaining to the contents
of THE CHRONICLE, to Mr. Sprague.
Suggestions for prospective members
to Mr. Bacon. Other matters, to Mr.
Hatch. Addresses as here given.

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Our Purpose

The purpose of the association is to encourage the study and better understanding of early American industry, in the home, in the shop, on the farm, and on the sea, and especially to discover, identify, classify, preserve and exhibit obsolete tools, implements, utensils, instruments, vehicles, appliances and mechanical devices used by American craftsmen, farmers, housewives, mariners, professional men and other workers.

Dues

The annual dues are payable September 1st, and are as follows: Regular members \$1.00; Contributing members, \$2.00; Supporting members, \$5.00; Sustaining members, \$10.00 and up. There is no distinction between the classes, except the amount of the dues, but the publication of THE CHRONICLE cannot be financed unless a considerable number of the members pay more than \$1.00. Each member is expected to voluntarily place himself in the class which represents the amount he is willing to contribute to the support of the Association for the current year. THE CHRONICLE is sent to all members without additional charge. Many of the back numbers may be secured from the Treasurer for from 20c to \$1.00 each, according to the supply on hand, and a twelve-page index to the twenty-four numbers of Volume I, containing a useful bibliography, for \$1.00 each. For further information, address any of the officers.

Early American Farms

(Continued from No. 15)

Elkanah Watson, a gentleman who had accumulated much experience by travel and some property by commerce, brought the first pair of merino sheep into Berkshire County, Massachusetts, in 1807. To instruct the farmers of that region on their value, he hit upon a new expedient. He "notified an exhibition" of the two sheep on Pittsfield green, and was astonished at the response from farmers, even women; after three years' effort, he organized a neighborhood cattle show and then a society to perpetuate it. "We take the liberty," said he in the announcement, "to recommend to farmers to select and prepare prime animals for exhibition, also for manufacturers to exhibit their best cloth, etc., for inspection and sale. All members of the society are requested to appear in American manufactures. Innocent recreation will be permitted, but everything tending to immorality will be discountenanced." Other cattle shows had been held, but none with elements of such appeal to ordinary farmers and their families; there were premiums for all kinds of produce and for women's work, also community singing, an oration and an "agricultural ball." The American county fair was born, with bands of music and pageantry of floats and ribboned cattle, with tented curiosities and miles of taffy candy, a social institution for instruction and entertainment, and not primarily for buying and selling. State aid was granted in 1817. The idea was operating elsewhere — probably the three-day exhibition held at Lexington, Kentucky, in 1814, for example, was of independent origin — but mostly it stemmed from Berkshire. The state society of Massachusetts took up the plan in 1817, and it spread to New York in the same year. Watson, who soon moved to Albany, went about formally administering a sort of baptismal rite to new fairs held far and near. *Niles' Register* credited him with the parentage of fifty fairs and, by the end of the eighteen-twenties, they had spread from Maine to South Carolina. They accomplished much. True, when state aid was removed, they languished, but the impulse was never lost and, revived about 1840 with more generous government patronage—and the added excitement of horse-racing—they flourished through the century.

Of more scientific benefit, however, was agricultural journalism. In 1819, John S. Skinner, the postmaster at Baltimore, established the *American Farmer*, the pioneer of the movement, though rivalled before 1830 by the *Ploughboy* at Albany, the *New England Farmer* at Boston, the *New-York Farmer* at that city, and the *Southern Agriculturalist* at Charleston. They all deprecated theoretical discussion and technical language, desiring to reach the "real, unsophisticated American" and considering themselves "adapted to the comprehension of uneducated common sense." Their original essays were generally by men of the country gentleman type—the *New England Farmer*, for instance, frequently attracting the pens of Timothy Pickering and Daniel Webster—but the style was kept as nearly as possibly on the specified level. They constantly played fresh breezes of suggestion upon the stifling conservatism of the American farmer. The multiplication of journals was defended on the ground that the various sections were so different in climate, soil and markets that each must be served by its own periodical; the *Cultivator*, founded at Albany in 1834 by Jesse Buel, a printer who had turned to farming with striking practical success, was the first to attain a truly national circulation.

Active Collectors

(Continued from page 138, column 3)

VERMONT

Springfield: Raymond A. Beardslee, 41 Wall St.

WASHINGTON

Seattle: Mr. and Mrs. Emil E. Martinson, 13446 Greenwood.

WEST VIRGINIA

Elkins: H. M. Darby

Gary: Miss Anna R. Stratton

According to Hazen's *Trades* (1837), ice cream was "composed, chiefly, of milk or cream, fruit and lemon-juice. It is prepared by beating the materials well together, and rubbing them through a fine hair sieve."

Willich's *Encyclopedia* (1821) states that "Dr. Franklin advises running upstairs repeatedly, as good indoor exercise."

The Chronicle

Saw Mills

(Continued from Page 137, column 3)

in the center of a square frame of sufficient size to allow free movement of the largest logs. To the lower side of this heavy frame was centered a connecting rod or *pittman*, which vibrated through the motion of a *pit wheel*. This *pit wheel* was of substantial weight and of proper diameter to complete the up-and-down stroke of the saw. The *pit wheel* in turn was, either directly or through a system of gears, connected with an *overshot* or *undershot* water-wheel, whose picturesque setting still incites one's romantic imagination. With the exception of a few refinements, the mechanism of these old saw-mills remained unchanged for nearly a century and a half. The more efficient turbine water-wheel gradually replaced the older type.

About 1845, a revolutionary improvement in saw-mill machinery featured a frameless saw, of which the blade was of sufficient rigidity to run without the supporting tension of a heavy frame. The motion of these saws was directed by top and bottom guides and, as a result of decreased weight, much more rapid operation was possible. Still further changes brought forth the finer-toothed saw with the directional set of the cutting edges placed in opposition, on the lower and upper sections of the saw blade, thus permitting a cutting action with both the up and down strokes of the saw.

Circular saws, which came into be-

ing in miniature size as a means of cutting segments for ancient wooden clock-wheels, advanced in importance, about 1825, to the sawing of plastering lath and, through the following decades, increasing sizes of lumber were processed until, about 1910, the circular saw entirely supplanted the antiquated up-and-down mill machinery.

It is quite possible to determine the approximate age of our old houses by carefully observing the sawed surfaces of their timbers. A broad *kerf*, with rough edges is indicative of the early days when the slow motion of widely-spaced saw teeth left a distinct mark. Later, increased rapidity and finer

teeth resulted in a smoother cut, which was further refined by the double-set teeth and very fast operation of the frameless saw. Of course, circular saw marks, particularly on larger timbers, are ample evidence of latter nineteenth-century construction.

So complete is the passing of these old up-and-down saw-mills that only in the most remote sections can any reminders of their one-time place in industry be found.



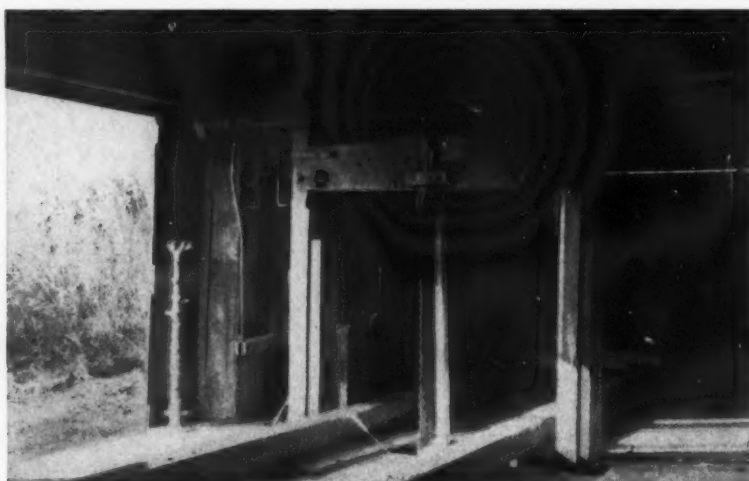
Blacksmith

(Continued from page 142, column 3)

Many a New England town has its smith today. There are still a few horses to shoe and a few wagons to mend; some of them do a good job on car springs and other modern vehicles; others have adopted electric welding. Many a "would-be" blacksmith is today working in a machine shop—and a few "has-beens" also. A blacksmith near Pittsfield once told me, in answer to the usual question "How's business?" "Well, I'll tell you. A horse now and then, a car with a busted fender or spring, baby carriages and odds-and-ends, but to tell the truth, haven't made a good day's pay since those summer folk gave up the fad of having me copy the old-fashioned hinges, latches and so forth. Lord, I made more out of andirons than carriage steps. Kinda quiet now though." Somehow, it seems as though the real need for the blacksmith has gone long since. I rest my case in Pittsfield.



DETAIL VIEW OF HEAD BLOCK AND DOGS



UP-AND-DOWN SAW AND FRAME

(The three-by-four timber back of the saw is no part of the mechanism but is temporarily used to hold the heavy saw frame up in position.)

Early American Industries Association

Membership

Membership lists should be amended as follows: (N) indicates new member; (S) indicates non-member subscriber; (Ch) indicates change of address; (D) indicates decease; (R) indicates resignation; (Co) indicates correction.

CALIFORNIA

Culver City: Loew's Inc., Metro-Goldwyn-Mayer Pictures (S)

CONNECTICUT

Hartford: Connecticut State Library (S)

New Haven: Bilodean, Francis W., 25 Cottage St. (N)

Stamford: Zimmerman, Mrs. E. R., 45 W. North St. (Ch from Cannondale, Conn.)

DELAWARE

Hockessin: Lake, E. C., "Snughill," Sharpless Rd. (Ch)

DISTRICT OF COLUMBIA

Washington: Hill, W. G., 1725 17th St., N.W. (N)

FLORIDA

Miami Beach: Walters, Dr. Arthur L., 4049 Pine Tree Drive (N)

MASSACHUSETTS

Boston: Crittenden, George A., 99 Milk St. (Ch)

Greenfield: Anderson, Miss Edith L., Box 494 (Ch)

Leicester: Lane, Warren C., 101 Pleasant St. (N); Lane, Mrs. Warren C., 101 Pleasant St. (N)

Winchester: Hudson, George L. (D)

Westfield: Salmond, Mrs. Herbert F. (Ch)

NEW HAMPSHIRE

Durham: Engelhardt, Fred, University of New Hampshire (N); Jolly, David, Hamilton Smith Library (N)

Lockport: Lawson, Mrs. Robert H., 351 Elson St. (Ch)

Meriden: Gaines, Miss Edith (N)

NEW JERSEY

Middlebush: Archibald, Lauren (N)

Montclair: Brown, Mrs. W. K. (R); Palmer, E. Schuyler, 14 Trinity Pl. (N)

Moorestown: Ewan, Nathaniel R., 3 W. Maple Ave. (N)

Morristown: Wing, Melvin J., Morristown National Historical Park (N)

New Brunswick: Krueger, W. C., Agricultural Experiment Station (N); Woodward, Dr. Carl W., 253 Lawrence Ave. (Ch)

Nutley: Stritch, Mrs. Frank, 552 Franklin Ave. (N)

Upper Montclair: Campaigne, Mrs. Curtis, 612 Upper Mountain Ave. (N)

NEW YORK

Berlin: Whitney, Peter (N)

Forest Hills: Wing, Alexander H., Jr., 88-45 62nd Drive (Ch)

Greenville Center: Cooper, Mrs. Belle H. (Ch)

Ilion: Fdsall, Mrs. Carroll A., 421 Otsego St. (Ch)

Harriman: Bailey, Theodore L. (N)

New York: Bettman, Otto, 215 E. 57th

St. (N); Davis, Gherardi (D); Ford, Dr. W. M. (D); Halle, H. J., 993 5th Ave. (Ch); New York University, Washington Square East (S); Poyaner, Miss Sylvia, 350 W. 85th St. (N)

Tappan: Mullan, Austin P., Jane St. (Ch)
Yonkers: Waring, Miss Janet (D)

Oregon

Portland: Portland Art Museum, West Park and Madison (S)

PENNSYLVANIA

Hershey: Patrick, Robert, Junior College (N)

Pittsburgh: Mellon Institute of Industrial Research, 4400 5th Ave. (S)

RHODE ISLAND

East Greenwich: Ladd, Paul, "Windmill Cottage" (Ch)

Providence: Freeman, Clarke, P. O. Box 1485 (N); Rhode Island Historical Society, 68 Waterman St. (S); Steere, Thomas E., 325 Grosvenor Bldg. (N)

WASHINGTON

Bellingham: Belford, Mrs. A. M., Waunkee Lodge (N); Burhoffer, Mrs. Frank, 1215 Taylor St. (N); Cavell, Miss Florence, 2211 Victor St. (N); Donovan, Mrs. T. N., 15th and Garden (N); Gould, Mrs. R. H., 2700 Eldridge (N); Kellogg, Mrs. John A., 417 Garden St. (N); Radcliff, Mrs. W. O. E., 437 21st St. (N)

Bothell: Gill, Mr. and Mrs. Ross, Chestnut Lane (Ch)

Chehalis: Foster, Chapin O., c/o The Chehalis Advocate (N)

North Bend: Hill, Mrs. Eugene S. (N)

North Seattle: Hefferman, Mrs. Harley, 2609 Broadway (N); Niendorf, Mrs. Hazel W., 2044 41st St. (N)

Seattle: Atwood, Mrs. A. M., 4710 University-Way, Wilsonian (N); Atwood, Miss Getsy, 4710 University-Way, Wilsonian (N); Barker, Mrs. Clifford, 6514 4th So. (N); Frada, Mrs. Johanna, 426 30th Ave. (N); Gray, Mrs. Connor E., 4851 E. 39th St. (N); Jackson, Miss Dorothea, 1302 Seneca (N); Pelling, Gilbert, Rt. 9, Box 523 (N); Telford, Neil, Rt. 9, Box 523 (N); Thun, Mrs. Charles A., 3926 Densmore (N); Welden, Mrs. J. F., 7918 Densmore (N); Youatt, Mrs. R. W., 6322 Ravenna Ave. (N)

The Questionnaire

Questionnaires recently received have been tabulated as follows. For key to abbreviations, see page 7.

CONNECTICUT

Farmington: Henry B. Reardon, Jr., Apple Hill, Talcott Notch Road (C). Collects HD, KH, LD. Wants LP. Write *. Visit.

New Haven: Edwin Pugsley, 77 Everit St. (C). Collects guns and pistols, watches and clocks, navigating instruments. Wants LP. Write only *. Visit.

Southbury: Mrs. John H. Ballantine, Ballamor Farm (C). Collects KH, LD, especially of pewter. Wants salt box. Write only *. Visit.

DISTRICT OF COLUMBIA

Washington: W. G. Hill, 1725 17th St. N.W. (C). Collects FT, KH, TC, VE, WM. Wants LP.

MASSACHUSETTS

Worcester: Warren C. Lane, 74 Front St. (C). Collects LD and material and data relating to glass factories prior to 1850. Wants LP. Write *. Visit (collection at Leicester, Mass.)

NEW JERSEY

Cedar Grove: Dr. Henry G. Smith, Essex County Hospital (C). Collects LD. Wants LP. Write. Visit.

Jersey City: Dr. H. Sheridan Baketel, 155 Van Wagon Ave. (C). Collects FT, KH, TC. Wants LP. Write *. Visit (collection at Sawyer Hill, Canaan, N. H.)

Middlebush: Lauren S. Archibald (C). Collects FT, KH, TC. Wants pump log auger. Wants LP. Write *. Visit (collection at New Brunswick, N. J.)

Morristown: Morristown National Historical Park. Interested in all types of Colonial and Revolutionary material. Wants farm implements and tools.

Roselle: Paul C. Hoopes, 620 Chestnut St. (C). Collects cannons, especially toy ones. Write only *. Visit.

NEW YORK

Brooklyn: A. N. Lincoln, 404 Clinton Ave. (C and D). Collects and deals in KH, LD, TC, WM, also bells, barber bottles and mortars. Wants LP. Write only *. Visit.

Flushing: Bert Cook, 35-29 172nd St. (C). Collects KH, HD. Wants LP. Write *.

Harriman: Mrs. Gillian W.B. Bailey (C and D). Collects and deals in FI, FT, HD, KH, LD, TC. Specializes in locks. Wants LP. Write only *. Visit.

Jackson Heights: Stephen Biggs, 79-14 19th Road (C). Collects TC, especially cabinet-makers tools in usable condition. Wants LP. Write *.

New York: Morris Curtis, 240 W. 55th St. (C). Collects early keyboard pianos (American preferred). Wants LP (before 1890). Write *. Visit.

New York: James F. Sullivan, 276 5th Ave. (C). Collects HD, TC (iron, leather and wood fabrication and dyeing), WM. Wants small pole or treadle lathe and formulae of vegetable or mineral colors. Wants LP. Write *. Offers to advise other members as to where in New York they may find articles they are seeking.

Tarrytown: Mrs. Lawrence J. Ullman, Heritage House, Prospect St. (D). Deals in HD, KH, LD, TA, TC, VE, WM.

RHODE ISLAND

East Greenwich: Paul R. Ladd, 144 Division St. (C). Collects FT, KH, LD, TC. Specializes in LD. Wants LP. Write only *. Visit (collection, except LD, at Warner, N. H.)

WASHINGTON

Olympia: Miss Dorothea Jackson, State Department of Education (C). Collects KH. Wants LP. Write only *.

Seattle: Miss Inez Annesley, 910 Republic Bldg. (C). Collects KH. Wants LP. Write only *.

Seattle: Mr. and Mrs. Emil E. Martinson, 13446 Greenwood (C). Collect LD. Want old burglar's candle, candle in small box used for flash-light, betty lamp with wick pick, lard oil lamp, candlestick with hook for hanging, rush-light holder. Want LP. Write *. Visit.

COMMUNICATIONS

From MR. L. L. THWING:

"THE CHRONICLE for September, 1938, has an interesting article on early encyclopedias, with particular mention of *Hinton's Magazine* and Pluche's *Spectacle de la Nature*. Mr. Sandford, to whom we are indebted for this, did not specifically mention any issues of the former magazine later than 1755. A search for any such at the Boston Public Library, discloses the fact that this magazine was published as late as 1807, but apparently not between 1794 and 1803. The card catalog reads:

HINTON, J. Universal Magazine of Knowledge & Pleasure. Vols. (1) to 95; June 1747-Dec. 1794. New series vols. 3-8 only. 1805-1807. (101 vols. bound in 58.)

I have searched these volumes to about 1770, but finding little of interest (to me) in the later volumes, the search was not continued. The publication becomes more and more like a modern magazine and less like an encyclopedia. Hinton evidently copied some of the plates in Pluche's earlier publication, as Mr. Sandford notes, but he often made better engravings, using much of Pluche's detail, but adding some of his own. Hinton's text has not been carefully compared with the French text, but it appears that at least some of his descriptions are of English origin.

The following list of plates is taken from the indexes of *Hinton's Magazine*. No other cumulative indexes seem to have been published.

A note in the supplement to vol. 51-1772 locates the following cumulative indexes of plates.

Vols. 1 to 22 at end of vol. 22	
22 30 30	
(missing in BPL set.)	
30 37 37	
38 51 51	

(There are a few plates based on Diderot & D'Alembert in the volumes 1770-1780, maps of the different states in the U.S.—and some fiction.)

Machines	Vol. and Page
Automatons (3)	10.252
Water raising engine—by fire	1.162
" " " " "	10.80
" " " " "	17.81
Fire engine	9.248
Machine for boring pipes	14.49
" " " " "	
" " at Marly	9.227
" " grinding lenses	9.248
" " drawing foul air	
" " out of ships	22.48
(Pump)	11.24

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Machine which ran at New-market in 1750	7.161
Water engine at Pont Neuf	21.97
London Bridge	5.241
Mechanic Arts (Selections from)	
Candles	4.228
Clocks & watches	2.88
Coining	7.67
Diamond cutting	5.234
Dyer's mill	16.337
Etching & engraving	3.178
Fulling mill	16.337
Glass making	1.149
" " "	.248
" " "	2.245
Hat making	6.145
Mill for ironwork	16.233
Letter foundry	6.274
Paper making	10.324
Refining gold and silver	1.236
Ribbon weaving	1.82
Silk winding (etc.)	1.134
Stocking frame	7.49
Tanning	8.273
Woollen mfg.	5.82 & 180
Vols. 30-37	
Cotton mfg.	35.57
Fireworks	36.290
Gilding	36.80
Needle making	35.113 & 192
Paper	32.169

The Abbé Noel-Antoine Pluche's *Spectacle de la Nature*, published in 1732, has many claims as the first encyclopedia to illustrate and describe the machines and methods of the trades. It is not alphabetically arranged, and it is not the first to discuss the arts and sciences, but it is the first to give a practical, naturalistic discussion of them.

The 'New Edition' consulted was published in 1770, but, according to bibliographies, these early editions all appeared in about the same format. This edition has eight volumes, but as volume II is in two parts, there are nine books in the set. The pages are about 4" x 7" and the folded plates are 7½" x 5½". Two volumes only, V and VI, have plates and descriptions of the trades.

There were at least three English translations. Altogether all but the last volume seems to have been translated. The British Museum has a translation (of volume I only) by Humfrey's in 1733 and four volumes translated by Kelly, Bellamy and Spencer, published in 1743. The Congressional Library has an edition of seven volumes "printed for R. Franklin" between 1740-1748. The translators are not named.

The following are the actual titles of the different volumes, or the nature of the subjects discussed.

Vol. I	Animals, Insects and Plants
II & III	Inside and Outside the Earth
IV	The Heavens
V	(Government, etc.)
VI & VII	(The trades, etc.)
VIII & IX	(Morals and religion.)"

From MR. LAWRENCE B. ROMAINE:

"I quote from the Connecticut Courant Supplement of February 4th, 1843:

'GLASS WAISTCOATS.—The very ingenious discovery of working glass into a substance resembling the richest silk is now brought into very general operation, and in various ways, such as gentlemen's waistcoats and stocks, ladies' dresses and many other articles of decoration, in the most splendid patterns. It is superior even to silk in flexibility, softness and the durability of it (a point, however, of no consideration with the haut ton among whom it is at present exclusively) as a matter of course, vastly superior. In process of time, when the manufacture has arrived at a more perfect state, and all its little defects remedied, and its wastings discovered, it will in all probability come within the reach of most classes of society, but at present its cost is its only drawback. The magnificence of its appearance is quite remarkable and when used in any considerable quantity, such as window curtains, etc., it should be seen before a just appreciation of its richness and its elegance can be entertained.'

Though not greatly concerned with modern fashions, it does seem to me that I have heard a good deal of late about the wonderful new glass stockings, etc., glass this and glass that, the World's Fair shows this and even that of glass. It would seem as though the good old Yankee had started it a long time ago. Perhaps the perfection hoped for in 1843 has just come of age."

The Albany Chapter, Society of Mayflower Descendants, is desirous of learning, if possible, the particular style of foot-warmer in use in this country prior to 1700.



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